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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/563,121 | 01/03/2006 | Jonathan Harrold | 250152-1820 | 8039 |

24504 7590 07/29/2011
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EXAMINER

VIEAUX, GARY C

ART UNIT

PAPER NUMBER

2622

NOTIFICATION DATE

DELIVERY MODE

07/29/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/563,121

Applicant(s)

HARROLD ET AL.

Examiner

GARY C. VIEAUX

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/21/2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-23,25 and 27-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11-23,25 and 27-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The Amendment, filed February 21, 2011, has been received and made of record. In response to the most recent Office Action, dated May 7, 2010, the specification, figures 1a-11b, and claims 1, 3, 5, 8, 12, 16, 25, 27 and 35 have been amended, and claims 2, 10, 24 and 26 have been cancelled.

Response to Amendment

In response to Applicant's amended drawings, amended figures 1a-11b are now properly designated by a legend such as --Prior Art-- because only that which is old is illustrated. Therefore, the objection to the drawings is withdrawn.

In response to Applicant's amended specification, the amendment provides proper reference to the co-pending application described in on lines 27-28 of page 19. Therefore, the objection to the specification is withdrawn.

In response to objected to claim 35, the amendment directly addresses and corrects the previously identified informalities. Therefore, the objection to claim 35 is withdrawn.

Response to Arguments

Applicant's arguments, with respect to the outstanding 35 U.S.C. 112 first paragraph rejection of claims 1-24 and 28-35 have been fully considered but they are not persuasive.

Specifically, the claims were rejected for failing to comply with the enablement requirement, as an intensity profile of an image of a nominal human pupil was not defined nor described in the original disclosure in such a way as to adequately inform one skilled in the art of the meets and bounds of the "profile" to any degree that they could make and use the same, or conversely, to avoid making or using the same based on what has been provided in the disclosure.

Applicants first assert that "*persons skilled in the art would understand that the "profile" of the present application is related to the shape of the pixel apertures*" (Remarks, p. 14; citing paragraph [0049] of the publication). The Examiner respectfully disagrees.

Paragraph [0049] provides "*wherein the shape of the pixel apertures is determined by the horizontal convolution of the nominal profile of the illumination spot at the pixel plane such that the integrated intensity at the window plane is constant across at least a first window boundary in the window plane.*" Although this passage discusses a "profile", it is directed to "*the nominal profile of the illumination spot at the pixel plane*" and not "***an intensity profile of an image of a nominal human pupil***" as currently claimed and as currently rejected under the first paragraph of 35 U.S.C. 112.

Applicants then go on to assert that "*the intensity profile would be understood by persons skilled in the art as an image of the light spot of the nominal human pupil in the nominal window plane formed in the pixel plane by the spatially multiplexing parallax element*" (Remarks, p. 15; citing support in paragraph [0109] of the publication). Again, the Examiner respectfully disagrees.

Paragraph [0109] provides "*Fig. 11a shows a prior art display in which a spot 500 which is the image of an observer's pupil in the nominal window plane when imaged through one lens 501 of a lenticular screen onto the pixel plane 502. The image 500 comprises a lateral intensity profile extending vertically generated by the lens element of a lenticular screen (comprising an array of vertically extending cylindrical lenses). The relative position of the peak intensity of the spot 500 is shown by the line 503. Generally the line 503 is parallel to the vertical columns of the pixels. In general, the shape and size of the spot 500 can be set by controlling the optical performance of the lens 501. The surface shape, lens materials and separation of the lens from the pixel plane may be adjusted to optimise the spot shape.*" (Bolding/Underlying added).

Although this passage provides that the spot is the image of an observer's pupil in the nominal window plane" and that the image comprises "*a lateral intensity profile*", the passage is still not found to define or describe at least "***an intensity profile of an image of a nominal human pupil***", nor is it found to equate the described profile as constituting an intensity profile of an image of a nominal human pupil which is intended to serve as a standard to others for possible measurement and comparison. It is not also found to define or describe this nominal profile in such a way as to adequately inform one skilled in the art of its meets and bounds; for example, how would one skilled in the art know how to determine "*a pitch substantially equal to a representative width of an intensity profile of an image of a nominal human pupil in the nominal window plane formed in the pixel plane by the spatially multiplexing parallax element, and said representative width is the width between the 5% and 95% cumulative integration points*"

of said intensity profile", as currently claimed, without knowing what constitutes an intensity profile of an image of a nominal human pupil in the nominal window plane?

Based on the above, the Examiner maintains the outstanding 35 U.S.C. 112 rejection, as "*an intensity profile of an image of a nominal human pupil*" was not defined nor described in the original disclosure in such a way as to adequately inform one skilled in the art of the meets and bounds of the "profile" to any degree that they could make and use the same, or conversely, to avoid making or using the same based on what has been provided in the disclosure.

Applicant's arguments, with respect to the outstanding 35 U.S.C. 112 *second paragraph* rejection of claims 1-15 and 30-35 (see Office Action dated May 7, 2010, p. 4) regarding incomplete limitations have been fully considered and they are persuasive. Therefore, the outstanding 35 U.S.C. 112 *second paragraph* rejection is withdrawn.

Applicant's arguments, with respect to the outstanding 35 U.S.C. 112 *second paragraph* rejection of claim 12 (see Office Action dated May 7, 2010, p. 5) have been fully considered but they are not persuasive. Specifically, there is still insufficient antecedent basis for "the opposite edges". The rejection of claim 26 is rendered moot by way of cancellation.

Applicant's arguments, with respect to the outstanding 35 U.S.C. 112 *second paragraph* rejection of claim 35 (see Office Action dated May 7, 2010, p. 5) have been fully considered and they are persuasive.

Applicant's arguments with respect to the 35 U.S.C. 102(b) and 103(a) rejections of the claims, in light of the current amendments, have been fully considered and are persuasive. The 35 U.S.C. 102(b) and 103(a) rejections have been withdrawn.

5

CLAIM REJECTIONS

Claim Rejections - 35 USC § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

10

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

15

Claims 1, 3-9, 11-23 and 28-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

20

Specifically, the claims, either directly or via dependence, reference an intensity profile of an image of a nominal human pupil. This "profile" is not defined or described in the original disclosure in such a way as to adequately inform one skilled in the art of the meets and bounds of the "profile" to any degree that they could make and use the same, or conversely, to avoid making or using the same based on what has been provided in the disclosure.

25

Further, in light of a lack of description defining an intensity profile of an image of a nominal human pupil, the claims cannot be adequately rejected on their merits in view

of the available prior art and possible relevant teachings, as, for example, the representative width of said intensity profile or an applied convolution cannot be determined without an understanding and description of what constitutes an intensity profile of an image of a nominal human pupil.

5

Claim Rejections - 35 USC § 112, Second Paragraph

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10 Specifically, claim 12 recites the limitation "*the opposite edges*" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

15 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

20 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,953,148 to Moseley et al (hereinafter "Moseley").

25 Regarding claim 25, Moseley teaches a display apparatus comprising a spatial light modulator comprising an array of pixels arranged in rows and columns in a pixel plane (fig. 10), the pixels comprising pixel apertures having gaps therebetween with the

gaps between the columns of pixels extending substantially parallel to the columns of pixels (fig. 10) and a spatially multiplexing parallax element capable of directing light from successive columns of pixels towards successive ones of two or more viewing windows in a nominal window plane (fig. 6, element 3), wherein the total height of the pixel apertures parallel to the columns of pixels varies, and has a profile which increases towards the opposite edges of the same pixel aperture relative to the centre of the pixel aperture (fig. 12). The Examiner notes that the claim language of "substantially" is a broad modifier, and as such, all associated claim language is considered in light of this broad modifier.

Regarding claim 27, Moseley teaches all of the limitations of claim 27 (see the 102(b) rejection to claim 25 supra) including teaching wherein the total height of the pixel apertures parallel to the columns of pixels has a profile which has a flat central portion (fig. 10).

Claims 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent No. EP 0 833 184 A1 to Woodgate et al (hereinafter Woodgate '184).

Regarding claim 25, Woodgate '184 teaches a display apparatus comprising a spatial light modulator comprising an array of pixels arranged in rows and columns in a pixel plane (fig. 1), the pixels comprising pixel apertures having gaps therebetween with the gaps between the columns of pixels extending substantially parallel to the columns of pixels (fig. 1), and a spatially multiplexing parallax element capable of directing light from successive columns of pixels towards successive ones of two or more viewing

windows in a nominal window plane (fig. 2, element 3), wherein the total height of the pixel apertures parallel to the columns of pixels varies, and has a profile which increases towards the opposite edges of the same pixel aperture relative to the centre of the pixel aperture (fig. 1).

5 Regarding claim 27, Woodgate '184 teaches all of the limitations of claim 27 (see the 102(b) rejection to claim 25 supra) including teaching wherein the total height of the pixel apertures parallel to the columns of pixels has a profile which has a flat central portion (fig. 10).

Conclusion

10 **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15 A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within
20 TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later
than SIX MONTHS from the mailing date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY C. VIEAUX whose telephone number is (571)272-7318. The examiner can normally be reached on IFW.

5 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for
10 published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
15 USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

20 Gcv2
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